

**Notice of Allowability**

Application No.

10/023,213

Examiner

THUY V. TRAN

Applicant(s)

STACK, TOM

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/08/2003 & Interview 4/5/04.
2. ☒ The allowed claim(s) is/are 1-4, 6-11, 13-17, 19-23 and 25-44.
3. ☒ The drawings filed on 12/17/01 and replacement of Fig. 12/8/03 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 04/05/2004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

*John Vanni*  
4-5-04  
primary examiner

## **DETAILED ACTION**

### ***Examiner's Amendment***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Douglas J. McEvoy on April 5<sup>th</sup>, 2004.

The Examiner's Amendment includes:

#### **In claim 25:**

Line 2, insert --included in an output circuit-- between "inverter" and "from"; and

Line 6, insert --wherein the output circuit includes the inverter comprising first and second field effect transistors in a push-pull configuration including a feedback device for causing the inverter to generate an oscillating lamp drive current-- between "current" and "."

### ***Allowable Subject Matter***

2. Claims 1-4, 6-11, 13-17, 19-23, and 25-44 are allowed.

### ***Reasons for Allowance***

3. The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose or fairly suggest:

- A ballast circuit comprising an output circuit coupled to the lamp drive circuit for producing a lamp drive current, wherein the output circuit includes an inverter comprising first and second field effect transistors in a push-pull configuration including a feedback device for causing the inverter to generate an oscillating lamp

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drive current, in combination with the remaining claimed limitations as called for in independent claim 1;

- A method of protecting a ballast circuit, wherein the output circuit includes an inverter comprising first and second field effect transistors in a push-pull configuration including a feedback device for causing the inverter to generate an oscillating lamp drive current, in combination with the remaining claimed limitations as called for in independent claim 25;
- A ballast circuit comprising a ballast protection circuit configured between the input and the output circuits for protecting the ballast circuit from providing excessive power at the output circuit; the protection circuit including a lamp current sensing circuit for sensing a voltage in the load circuit, and a response circuit coupled to the current sensing circuit to prevent the inverter from oscillating and thus reduce the power to the output circuit when the sensed load current reaches a given level, in combination with the remaining claimed limitations as called for in independent claim 29;
- A ballast circuit including (i) an oscillation circuit between the input circuit and output circuit for creating an oscillating current for the output circuit to drive the electric discharge lamp, and (ii) a protection circuit including at least one diode and a trigger circuit coupled to each other for reducing the drive current in the output circuit when a voltage in the input circuit reaches a given level, in combination with the remaining claimed limitations as called for in independent claim 30;

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- A ballast circuit comprising a ballast protection circuit for protecting the lamp drive circuit, including a detection circuit coupled to the DC input circuit and configured to detect when a voltage from the DC input circuit exceeds a threshold, and a shut-off device coupled to the detection circuit and to the lamp drive circuit for preventing the lamp drive circuit from producing a lamp drive current, in combination with the remaining claimed limitations as called for in independent claim 39;
- A ballast circuit comprising a lamp drive circuit coupled to between the high voltage line and the base line, wherein the lamp drive circuit includes an inverter circuit, which includes a pair of MOSFETs, in combination with the remaining claimed limitations as called for in independent claim 40;
- A ballast circuit comprising a shut-off device coupled to the detection circuit, wherein the shut-off device includes an SCR, in combination with the remaining claimed limitations as called for in independent claim 41;
- A ballast circuit comprising a detection circuit, wherein the detection circuit is configured to detect when a voltage on the high voltage line exceeds a value equal to approximately twice the voltage on the high voltage line under normal operating conditions, in combination with the remaining claimed limitations as called for in independent claim 42;
- A ballast circuit comprising a detection circuit coupled between the high voltage line and the base line, wherein the detection circuit includes a series of diodes, in combination with the remaining claimed limitations as called for in independent claim 43; and

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- A ballast circuit comprising a shut-off device coupled to the detection circuit and to a gate of the MOSFET of the lamp drive circuit for preventing the lamp drive circuit from producing the lamp drive current when the detected voltage on the high voltage line exceeds the threshold, in combination with the remaining claimed limitations as called for in independent claim 44.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THUY V. TRAN whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:30 AM-6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DON K. WONG can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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THUY V. TRAN  
Examiner  
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T.T.  
04/05/2004

*Jan Vannu*  
primary examiner  
4-5-04